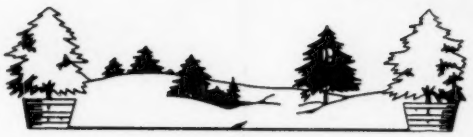
American Society for Testing Materials
BULLETIN

ISSUED BI MONTHLY

Yuletide Greetings

December
1933



ENGINEERS' CLUB BUILDING
1315 SPRUCE ST., PHILADELPHIA

MACHINEABILITY

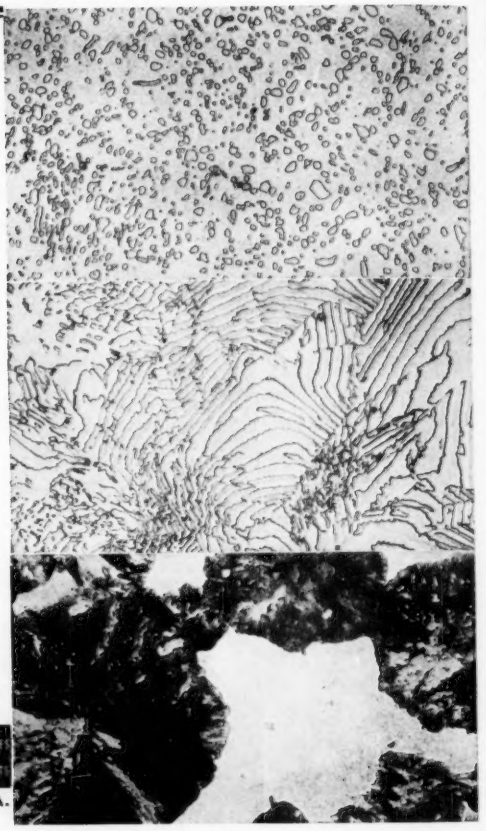
"TOO hard, the stock tears!" complains the machine shop superintendent.

NRA MEMBER U.S. WE DO OUR PART

Milling machine cutters, lathe tools, broaches, drills won't hold their edges—and other troubles appear.

Look to the annealing for the solution! The structure of metal is fully as important BEFORE final heat treatment as after, for that is when machineability is determined.

Which of the above photomicrographs represents the metals you are processing now? A metallographic equipment will tell you. Such analyses will cost little enough for the results obtained, will assure you of smooth, well machined parts and can save on your other operations.



Upper—Spheroidal Cementite: Softest and most ductile condition of steel, but not very strong.
Center—Pearlite: Soft and ductile steel. Moderately strong.
Lower—Troostite: Hard and strong, but only moderately ductile.

GREATER VISION THROUGH OPTICAL SCIENCE BAUSCH & LOMB

BAUSCH & LOMB B & L GLASS IS USED IN B & L MICROSCOPES, TELESCOPES, BINOCULARS, SPECTACLE LENSES AND FRAMES, OPHTHALMIC APPARATUS, SCIENTIFIC INSTRUMENTS

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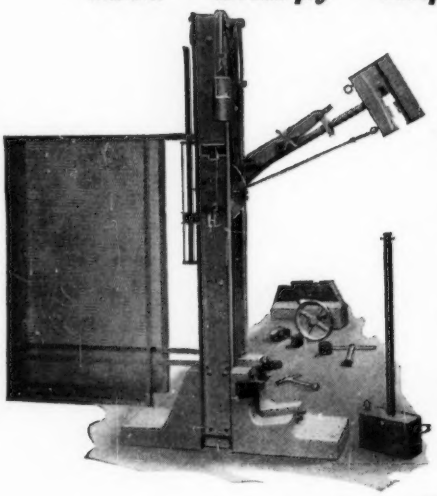
OLSEN UNIVERSAL IMPACT TESTING MACHINE

FOR

Izod - Charpy - Impact Tension and Impact Torsion Tests

(PATENT APPLIED FOR)



Truly a Universal Impact Testing Machine.

Izod impact tests, using the standard specimen, with standard conditions.—Charpy impact tests, to meet specifications.—Impact torsion tests on small round or flat specimens.—Last, but not least, impact torsion tests, especially adapted for heat-treated material.

All these tests can be made on the machine shown, with minimum time and effort involved.—Necessitates only interchange of hammer, scale, and holder to make any type tests desired.—Includes provision for adjusting the height of drop of the hammer.

All tests made on the machine meet existing specifications for that type of test. Uniformly graduated scale reads directly in foot pounds for all testing, no computation being necessary.

Safety features of snubbing pendulum after break, and use of screen shown, tend to protect the operator. The base is exceptionally heavy, providing increased stability in the machine.

Means to check the calibration of the machine at any time are included.

Further information supplied on request, stating requirements.

OTHER OLSEN PRODUCTS

Static-Dynamic Balancing Machines, Universal Testing Machines and Instruments

TINIUS OLSEN TESTING MACHINE COMPANY

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American Society for Testing Materials

BULLETIN

ENGINEERS' CLUB BUILDING 1315 SPRUCE STREET PHILADELPHIA, PA.

NUMBER 65 DECEMBER 21, 1933

1934 Regional Meeting in Washington—March 7

Symposium on Outdoor Weathering of Metals and Metallic Coatings to Be Feature

AT the 1934 Regional Meeting, which is to be held in Washington on Wednesday, March 7, a Symposium on the Outdoor Weathering of Metals and Metallic Coatings will be held. This meeting, together with the group meetings of A.S.T.M. committees which will be in progress throughout the five days of the week beginning March 5, will be held in the Wardman Park Hotel.

The choice of the majority of the A.S.T.M. committees in selecting Washington for this series of meetings seems a logical one, inasmuch as previous meetings have been held in Detroit, Pittsburgh, Cleveland and New York with the annual meeting in Chicago this year. Another determining factor which governed the choice was the fact that Washington had not been the scene of an organized meeting of the Society since 1928. It is expected the Washington meeting will focus attention on A.S.T.M. and its work, and at the same time the technical program which is being developed will make available authoritative information and data on a subject in which increasing interest is noted.

General arrangements for the Regional Meeting and group meetings of committees are in charge of a local committee headed by A. C. Fieldner, Chief Engineer, Experiment Stations Division, U. S. Bureau of Mines. Other members of this committee are:

H. F. Clemmer, Engineer of Tests, Department of Highways, District of Columbia.
W. M. Corse, Metallurgical and Chemical Engineer.
F. H. Jackson, Senior Engineer of Tests, U. S. Bureau of Public Roads.
H. S. Rawdon, Chief, Division of Metallurgy, U. S. Bureau of Standards.
Stanton Walker, Director, Engineering and Research Division, National Sand and Gravel Assn.

Mrs. Clemmer is to assist this committee in developing a program for the ladies' entertainment.

The preliminary plans of this committee schedule the technical session for the afternoon with a dinner following at 6.30 P. M. Addresses on subjects of current interest will be presented by speakers of national renown.

Interesting Symposium Planned

The Symposium on Outdoor Weathering of Metals and Metallic Coatings is being sponsored jointly by Committee A-5 on Corrosion of Iron and Steel and Committee B-3 on Corrosion of Non-Ferrous Metals and Alloys. These committees have appointed a program committee to take active charge of the symposium and develop the necessary plans. This group has the following personnel:

F. F. Farnsworth, *Chairman*, Outside Plant Engineering, Bell Telephone Laboratories, Inc.
W. H. Finkeldey, Metallurgist, Singmaster & Breyer.
C. L. Hippensteel, Technical Staff, Bell Telephone Laboratories, Inc.
R. F. Passano, Research Laboratories, American Rolling Mill Co.
H. S. Rawdon, Chief, Division of Metallurgy, U. S. Bureau of Standards.
Sam Tour, Vice-President, Lucius Pitkin, Inc.

The broad purpose of the symposium will be to make conveniently available so that its use may be widespread the engineering information developed in the extensive series of outdoor tests of materials under the sponsorship of Committees A-5 and B-3.

Committee A-5 on Corrosion of Iron and Steel, organized in 1906, has been among the very active Society groups. It has sponsored a number of very important test programs and one of these, involving atmospheric corrosion tests of a great number of materials with the purpose of comparing copper-bearing with non-copper bearing materials, has been under way for 17 years. The work of this committee has been extremely valuable in developing authoritative data on the use of copper in metals for the purpose of affording higher corrosion-resistance properties. Other important investigations sponsored by the committee are an extensive series of total immersion tests on bare iron and steel sheets and a comprehensive program of field tests of metallic coatings.

Committee B-3 on Corrosion of Non-Ferrous Metals and Alloys which was organized in 1922 also has done a great deal of work in developing reliable information and data in its field. It has under way at the present time probably one of the most elaborate research programs in progress in this country. It has been roughly estimated that for the past six years during which extensive tests have been performed and preparations made for the unparalleled series of exposure tests now under way, leading American companies who have supported the work have contributed $200,000 in the form of materials, labor, special testing equipment and funds. The present program involves atmospheric corrosion tests, liquid corrosion, such as that caused by acids, soda, salt, etc., and galvanic and electrolytic corrosion caused by contact of dissimilar metals.

The report on atmospheric corrosion, which appeared in the 1933 report of Committee B-3 developed, even though it was based on only a year's exposure, some very interesting data. The reports of the other subgroups which are now being prepared for inclusion in the 1934 report will also make available data of considerable interest.

With the extensive and long-time activities of these committees as a background, it is expected the symposium planned for the Regional Meeting will be a most interesting one. At the present time, the plans of the symposium committee call for the presentation of four papers. The papers will deal primarily with an analysis of performance data obtained from outdoor weathering tests. It is intended that the discussions shall illustrate certain proper uses to which Society test data may be put by any materials engineer in solving his daily problems.

The papers to be presented are:

1. Outdoor Test Results on Bare and Metal-Coated Ferrous Specimens—C. D. Hocker, Chemical Engineer, Bell Telephone Laboratories, Inc.
2. How Soon is it Safe to Draw Conclusions?—A Discussion of the Early Interpretation of Test Results in the Atmospheric Corrosion of Non-Ferrous Metals and Alloys—W. H. Finkeldey.
3. Galvanic Corrosion by Contact of Dissimilar Metals—C. L. Hippensteel.
4. The Harmony of Outdoor Weathering Tests—R. F. Passano.

The authors will not be limited to the conclusions or opinions that have been stated officially by the two corrosion committees of the Society. However, the inferences which will be drawn by the authors will be based on data taken from the Society's published reports or data from other sources which they consider equally reliable.

A further announcement of the program and arrangements will be made in the January BULLETIN. All members of the Society, their friends and associates, and those interested are cordially invited to attend the symposium and dinner. From the standpoint of attendance these meetings are by no means "regional," for engineers and technologists from all parts of the country attend.

Group Meetings of Committees

As previously mentioned the standing committees of the Society will hold their annual spring group meetings from Monday, March 5 through Friday, March 9. The facilities offered by the available hotels in Washington have been carefully studied and it is felt the Wardman Park is well equipped for the particular requirements of the A.S.T.M. group meetings.

It is expected that arrangements will be made with the railroad passenger associations for the granting of the certificate plan of transportation which enables members to save a considerable portion of their railroad fare. The matter of room reservations, schedule of committee meetings, etc., will be discussed in more detail in the next issue of the BULLETIN.

All members of the Society should note on their 1934 calendars, March 5 to 9.

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1934 Annual Meeting—Atlantic City, June 25-29

Atlantic City has been chosen as the city where the 1934 annual meeting will be held. Chalfonte-Haddon Hall, with its fine facilities for meetings such as ours, has been selected as the convention hotel and a reservation for the dates June 25 through June 29 has been placed. Several technical features are being developed and with technical papers of the usual A.S.T.M. caliber in prospect and committees which have important work in progress looking forward to important reports, an interesting technical program will be developed. Members are urged to plan for attendance at the meeting and at the same time enjoy some of the recreational facilities for which Atlantic City is famous.

Review of Work of A.S.T.M. Committee E-10 on Standards

The activities of A.S.T.M. Committee E-10 on Standards are assuming such importance in promoting Society standardization work, that a brief review of its work seems in order. To many of the members elected since 1930 a few pertinent facts about Committee E-10 work may serve as a background in acquiring a clear conception of how this committee functions.

Prior to 1929, our regulations provided only one means whereby a proposed standard could be approved for publication as tentative—that was by action of the members at the annual meeting. It became increasingly evident to many of the members and especially to the Executive Committee and Committee E-5 on Standing Committees (composed of the chairmen of standing committees) that some procedure should be provided for approving a tentative standard in the intervals between annual meetings. No matter how urgent the need for a specification or test method, if the committee developing it could not whip it into shape in time for presentation at an annual meeting, a delay of a year was necessitated. After much consideration, the Executive Committee and Committee E-5 in 1929 proposed to the membership that the Society Regulations be modified to provide that a new committee—E-10 on Standards—be given the authority to pass upon proposed standards. The new committee was also to cooperate in promoting A.S.T.M. standardization work, to consider the expansion of the work into new fields and to act as an advisory committee to the Executive Committee on general standardization matters.

In reviewing a proposed new standard, Committee E-10 determines whether all requirements relating to the preparation and submission of standards are observed and whether the submitting committee has reached a substantial consensus of opinion. The latter must present a complete report covering the proposed standard, the reasons for all negative votes, etc. When the respective proposal is being studied by Committee E-10, two designated representatives of the submitting committee can sit with the former with full voting privileges.

Some idea of how efficiently the Committee E-10 procedure has worked can be had from the number of proposed standards and revisions in existing standards and tentative it has approved. Since February, 1930, when Committee C-1 on Cement submitted the first proposed standard for its consideration, Committee E-10 has approved for publication as tentative 38 proposed standards and has approved revisions in 35 tentative standards.

The scope of the committee also includes passing on proposed revisions of standards for publication as tentative. The committee has approved as tentative revisions in 7 A.S.T.M. standards.

While the above figures are indicative of how important has become the work of the committee, it must be remembered its activities are based on the proposals submitted by the standing committees. Its work makes possible reasonably prompt action in the publication as tentative of proposed new standards and proposed revisions of tentative standards and standards. Since its organization, Committee E-10 has closely studied the Society standardization work and as a result of its several recommendations, this work has been extended and in some instances more efficiently coordinated.

Society Moves Into New Headquarters

Their Significance as Viewed by the Secretary-Treasurer

THE Society moved into its new headquarters at 260 S. Broad St., Philadelphia, on December 16. This to me is a real thrill—to realize that our Society, through a fortuitous opportunity that presented itself a few months ago, is now occupying rooms that provide greatly improved working conditions for the staff and at the same time give an atmosphere to the Society's home more in keeping with its standing and renown throughout the technical and scientific world.

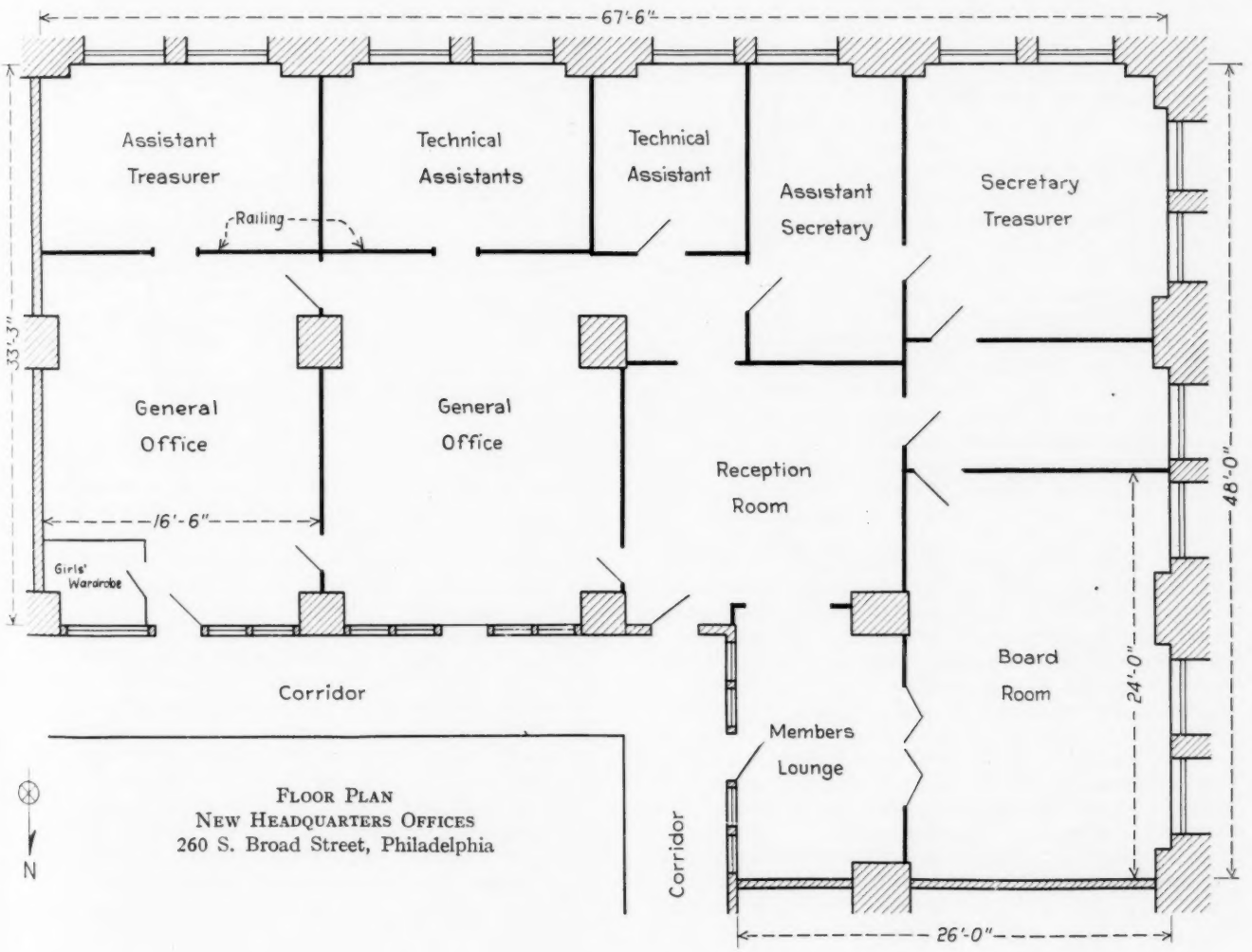
Many times has your Executive Committee discussed this problem and studied various possibilities. The inevitability of *some* change was realized quite a few years ago, and at that time the Headquarters Fund was created which has made it possible to make the move, to do such refurnishing as was required, and most important to furnish modestly, but we hope attractively, a Reception Room, Members' Lounge and Board Room—all without drawing upon current income.

This move in headquarters must, of course, be kept in proper perspective. We know that the real strength of A.S.T.M. is in its membership, in the devotion of that membership to the purposes for which we exist as an organization, and in the maintenance of the high ideals set for the Society by those who founded it. These things essentially are independent of such matters as the kind of headquarters we occupy. We are known the world over by our works. And yet, there can be little question that the kind of "home" an organization establishes reflects its standing in no small measure. Quite a few visitors come to our rooms in a year's time, many of them men of affairs, whose first impressions of the Society are gained from what they see when they enter our headquarters. The atmosphere of the new rooms will aid in giving a distinctly favorable impression.

Third A.S.T.M. Headquarters

Members recently affiliated with the Society may not know that these are the third headquarters the Society has occupied. For seventeen years after incorporation of the Society in 1902, the offices were in the Department of Civil Engineering at the University of Pennsylvania, of which our first secretary, Dr. Edgar Marburg, was the director. My own contacts with the Society extend back into that period, beginning with 1909, and I can well recall the suite of three rooms comprising Doctor Marburg's office in which

(*Concluded on page 5*)



FLOOR PLAN
NEW HEADQUARTERS OFFICES
260 S. Broad Street, Philadelphia

AMERICAN SOCIETY FOR TESTING MATERIALS

BULLETIN

Issued Bi-Monthly

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Number 65 December 21, 1933

Testers Tested

DURING 1932 and 1933, the Society has continued to make progress in its particular field of developing and standardizing test methods. In this period the Society has also been much involved with another phase of testing—"reverse English" testing—and Old Man Depression has really applied a quite rigorous series of tests, apparently aimed to determine if A.S.T.M. is on solid ground, if its membership and committees are imbued with this A.S.T.M. spirit and particularly to find out if A.S.T.M. is a good "going" concern.

It is not our purpose to predict whether this testing "course" is to continue, but we should like to indicate briefly how well the A.S.T.M. "ultimate strength"—or should we say "endurance limit"—has held up during this period. A few comments and statistics on the two broad phases of A.S.T.M. work—standardization and research—may suffice. Standardization first.

1933 was without doubt the most productive standards year the A.S.T.M. has had. Fifty-seven new standards were adopted and during the year 49 proposed standards were approved as tentative. Action on standards is of course more intensive during a Book of Standards year so that a comparison with 1931 and 1932 would not be a just one. However, in 1930, 45 new standards were adopted. During 1930, twenty-one proposed standards were approved as tentative; in 1931, twenty-five; and in 1932, forty-six. It seems consistent then to conclude that in standardization, A.S.T.M. has made much progress during the depression years.

There also have been forward developments in publishing the specifications and methods and promoting their use. Since 1930, several committees have compiled into a single compact volume all of the standards pertaining to their particular industry. These have been widely distributed—and we know they have effected a better understanding of A.S.T.M. work.

When we consider research and promotion of knowledge of engineering materials, we can only conclude that here, too, A.S.T.M. has made great advances despite industrial conditions. In October, 1930, a review of research activities revealed that 49 committee projects were under way involving research on properties of materials and 45 on research covering methods of testing. Corresponding figures for October, 1932, were 50 and 72. Not much diminution here. Figures for this year are not yet available, but it is known that no project has been dropped. It is true that actual progress on some projects is delayed pending a better industrial environment. Several committees have a number of new projects under way as listed in the July BULLETIN and beginning on page 8 of this issue. The figures when compiled will record this expansion.

During the depression years, the several important symposiums held on live engineering topics—for example, the series of symposiums on the properties of metal castings, jointly sponsored by the A.F.A. and A.S.T.M.—and the continued policy of publishing this information and the many technical papers and reports which are presented at A.S.T.M. meetings have contributed a great deal to the furtherance of a better understanding of the properties of materials.

The foregoing items are a basis for justifiable pride in A.S.T.M. virility. Not a boastful pride—for in the years ahead there is an immense amount of work to be done. But anyone at all familiar with the spirit of the membership and with the vigor and ability of the committee members and officers, surely cannot fail to feel that A.S.T.M. will forge ahead and in its particular fields of work continue to render valuable and essential service.

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Papers Solicited for Annual Meeting

In the Circular to Members: No. 224, which was sent on December 1 to each member of the Society, the customary invitation was extended to offer papers on subjects relating to the properties or testing of engineering materials for presentation at the 1934 annual meeting in June. This call for papers is extended early in order that the program can be completely developed as soon as possible. Because of the A.S.T.M. policy of preprinting papers and reports in advance of the meeting, this is quite essential.

The limiting date fixed for receipt of offers is February 23, but members who are thinking of submitting a paper are urged to send their offers as soon as possible. Offers must be accompanied by a summary of the proposed paper in sufficient detail to make clear its scope and to point out the features that in the author's opinion make the paper a desirable one for presentation and discussion at the meeting.

While many of the members for various reasons are not in a position to submit papers, nevertheless, they can assist the Committee on Papers and Publications by suggesting subjects which they believe would be pertinent, with names of technologists who might write on the subject in an adequate and authoritative way. Invitations to submit papers are not limited to A.S.T.M. members and many outstanding technical contributions to our *Proceedings* have been made by men who were not affiliated with the Society. The Papers Committee tries to maintain an appropriate balance between papers in the many engineering materials fields, but suggestions from the members are at all times welcome and helpful.

Every Member Can Help

There are probably few organizations, national in scope, which have as high a percentage of membership really active in their work as does the A.S.T.M. Roughly, half of the membership is engaged in committee work—of course it is the A.S.T.M. committee structure which makes this participation so extensive. Committee work is extremely important for it is the basis of our extensive standardization and research activities.

Also a very important activity—never more important than now—is the enlisting of new members. Here is a task in which every member can take part. Only by the sustained work of present members can we make up our membership loss and begin to show a net gain.

A greater number of members directly enhances the value of membership to each individual member. It means even more extensive publications and the development of further important research work. Increased membership means increased interest in A.S.T.M. work and results in a wider use of its service. The membership committee is actively at work and it needs all possible help.

It is hardly necessary to point out ways in which a member can help. From his circle of associates and business contacts there surely are some who would derive benefit from A.S.T.M. affiliation. There should be no more effective argument than his own viewpoint of the value of membership. If a member is hesitant to extend an invitation, but still feels that a certain individual should be invited, he very appropriately can get in touch with the membership committee—K. B. Cook, chairman, Arthur W. Carpenter, H. G. Farmer, H. M. Hancock, Inge Lyse and H. S. Vassar—and supply sufficient information as a background so that this committee can extend an appropriate invitation.

The next two or three months are strategic times so far as membership work is concerned. New members get either part of the Book of Standards, Book of Tentative Standards and other publications. A.S.T.M. publications are extremely valuable and are a very real asset of membership. Recent BULLETINS have listed the new members. The lists should be expanded—each member can do his part.

A. A. STEVENSON DIES

As we go to press, we are immeasurably saddened by the death on December 15 of our esteemed and beloved Past-President and Honorary Member, A. A. Stevenson. One of its foremost members, a leader in thought and action through all the years of its existence, the Society was very near and dear to his heart. He gave unstintingly of himself to advance its work and much of the success that has come to us in bringing producer and consumer into sincere cooperative relations with one another we owe to the inspiration of his leadership and his remarkable ability in dealing with the human side of such relationships. He was loved and admired by all who came to know him well, and there were many thus privileged.

Our friend passed away after an illness of several months, during which he fought with his usual cheerful courage against heavy odds. We mourn him, but his memory will ever be fresh in our hearts. What a pleasure to have known him, to have worked with him! May we ever strive to build the Society nearer to the ideals he so dearly cherished.

The Society will publish a memoir in the January BULLETIN.

OPEN HOUSE

Inspection of New A.S.T.M. Headquarters

MONDAY EVENING, JANUARY 29

Members and friends of the Society are cordially invited to visit and inspect the new headquarters and meet the officers.

Refreshments

260 S. Broad Street, Fifth Floor, Broad and Spruce

New Headquarters—(*Continued*)

the administrative work of the Society was carried on. Our activities grew rather rapidly during the last years of that seventeen-year period, and shortly after Doctor Marburg's death in 1918 it was realized that we would need to seek other offices. So, in the fall of 1919 the Society, with a staff numbering five, moved into offices comprising about 1200 sq. ft. on the third floor of the Engineers' Club of Philadelphia. In 1924, additional space on the fourth floor was taken, making a total of approximately 2200 sq. ft.

And now, with a staff of 17, we move into more spacious quarters. The 2200 sq. ft. becomes about 3050 sq. ft. At the same time we have given up space for publications in a storage building and have taken an additional 425 sq. ft. for that purpose, making a total now occupied of 3475 sq. ft. Of this space 850 sq. ft. is in storage, workroom and shipping room on the fourth floor and 2625 sq. ft. in offices, reception room, members' lounge and board room on the fifth floor. A plan of the latter is given on page 3.

Much thought and consideration is being given by the Headquarters Committee to the furnishing of the Reception Room, Members' Lounge and Board Room, and I am confident that these rooms will be a real pleasure to all who come to them, members and visitors alike. We have never before had a room specifically for members use such as we now have and we are hoping most earnestly that members will make full use of it. A most cordial invitation is extended to each member to visit us whenever he is in Philadelphia and to use these new quarters for his convenience and comfort at every opportunity. An informal "open house" is to be held on the evening of January 29 and it is hoped as many members as can will take the opportunity to inspect the new offices and meet the officers who will be attending the Executive Committee meeting on January 29 and 30.

1933 Book of Tentative Standards Issued

The current issue of the Bock of A.S.T.M. Tentative Standards, comprising 1136 pages, was recently published. Forty-nine of the 223 tentative specifications and test methods are new ones issued for the first time during 1933. All proposed revisions of standards are also given. The size of the book is of course no indication of its value—only an examination of it or a careful perusal of the table of contents will give a fair idea of what it covers.

It may be that some of the members do not fully understand just what the Book of Tentative Standards comprises, and many may wish to order copies after they have an opportunity of studying the complete table of contents which is being sent with this BULLETIN. A convenient order blank, listing the special prices to members, is also included.

Marburg Lecture Published

The 1933 Marburg Lecture, which was delivered at the last annual meeting by Dr. H. J. Gough, F.R.S., Superintendent, Engineering Department, National Physical Laboratory, England, on the subject "Crystalline Structure in Relation to Failure of Metals—Especially by Fatigue," has been published and copies in separate form are now available. Doctor Gough for over ten years has carried out extensive experimental studies of metallic single crystals and he discusses in this notable lecture that section of the work concerned principally with the characteristics of deformation and fracture under mechanical forces.

The lecture is considered to constitute a very important fundamental survey of our present-day knowledge of the nature of solid bodies and is an especially timely one since comparatively little work has been done in this field. Because of the many excellent photomicrographs of metals and crystals, the lecture is printed on special glossy stock to bring out to best advantage details of the illustrations. The published lecture is bound in a heavy paper cover. Members can obtain copies of the reprint at the special price of 75 cents each, the list price being $1.00. It will of course also appear in Part II, *Proceedings*.

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Symposium on Cast Iron Available

The Symposium on Cast Iron, held at the 1933 annual meeting, was the third in the series which has been jointly sponsored by the American Foundrymen's Association and the Society for the purpose of providing authoritative data and information on the properties of metal castings. Malleable iron castings were covered in 1931, and steel castings in 1932.

In its published form, the Cast Iron Symposium is a compilation, correlation and critical interpretation by experts of information and data on the production and use of this material. An advisory committee, including in its personnel outstanding authorities, was appointed by the two societies to supervise the symposium.

The committee solicited the assistance of other recognized technologists and appointed an editorial committee to review and revise the initially submitted material. This committee included the following:

H. Bornstein, *Chairman*, Director of Laboratories, Deere and Co.
R. E. Kennedy, *Secretary*, Technical Secretary, American Foundrymen's Association.
J. W. Bolton, Chief Chemist and Metallurgist, The Lunkenheimer Co.
J. T. MacKenzie, Chief Chemist, American Cast Iron Pipe Co.
R. S. MacPherran, Chief Chemist, Allis-Chalmers Manufacturing Co.
E. K. Smith, Metallurgist, Electro Metallurgical Co.

In the space allotted here, it is quite impossible to enumerate the pertinent subjects covered or to give a conception of the value of the published symposium. Needless to say, its method of preparation insures a composite viewpoint on the given material, and an authoritativeness not otherwise possible. Several subjects covered include metallurgy, involving alloy cast iron; properties (physical constants, mechanical properties); classification and specifications; heat treatment; white and chilled irons; welding; and foundry factors of importance in production.

The symposium comprises 164 pages. Copies in heavy paper cover are available at $1.00 per copy.

A Note from Doctor Gough

The following note has been received by Past-President Chapman from Dr. H. J. Gough, England, who delivered the notable Eighth Edgar Marburg Lecture at the annual meeting in Chicago last June.

NATIONAL PHYSICAL LABORATORY
ENGLAND
OCTOBER 5, 1933

CLOYD M. CHAPMAN, Past-President
AMERICAN SOCIETY FOR TESTING MATERIALS

DEAR MR. CHAPMAN:

The invitation which I received to attend the Chicago Meeting of the Society was signed by yourself and President Rufus C. Dawes, of A Century of Progress. As a result of this invitation, I paid a visit to America which will always be the subject of very happy memories. I had the privilege of meeting yourself and many other officers and members of the Society and kindred associations. Everywhere I went I was received with the utmost friendliness and kindness, and was given opportunities to pay many very interesting and instructive visits to universities, laboratories and industrial plants. Being selected as the Eighth Edgar Marburg Lecturer was greatly esteemed as a special honor.

During the delivery of the Marburg Lecture and conversations with yourself and others, I made reference to my appreciation of the invitation you extended to me but I feel that—now I have returned to England—I cannot let the matter close without expressing my thanks in a more formal manner. I write, therefore, to express to you and the members of the Society, my gratitude for all the kindness I received at your hands and the hope that—at some time in the not too far distant future—an opportunity will arise by which I shall be permitted to renew the many valued friendships I made during my visit to America in 1933.

With kindest regards,

Yours very sincerely,

H. GOUGH.

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Index to Standards Widely Used

The Index to A.S.T.M. Standards and Tentative Standards which is issued annually in December is widely distributed. The number of requests for copies has continued to increase, indicating that the use of the publication is steadily becoming more widespread.

The Index gives under appropriate key words, the titles of all Society standards, together with page references to the A.S.T.M. publications in which they can be found. Each specification and test method is indexed under the principal subjects it covers. Purchasing agents, specification writers, testing engineers and many others find the Index of considerable assistance, not only in locating a particular specification or method of test, but also in determining whether or not there is an A.S.T.M. standard on a specific subject.

This year while the method of indexing is essentially the same as used previously, the titles of the standards are arranged in a manner which is believed to be more convenient and to enable references to be more quickly located. It is suggested that members place the Index in their files next to their Book of Standards and Book of Tentative Standards for convenience. When members find it necessary to locate a specification or determine whether it is standard or tentative, they should find the Index very serviceable.

Copies of the Index are furnished on request, without charge. If any member desires an additional copy to pass along to an associate, it will be gladly furnished.

New Structural Steel Specifications Approved as Tentative

On the recommendation of Committee A-1 on Steel, there have been approved for publication as tentative three new specifications covering steel for bridges, steel for buildings, and mild steel plates. The specifications, approved by Committee E-10 on Standards on October 30, have the following titles and serial designations:

Tentative Specifications for Steel for Bridges (A 7 – 33 T)
Tentative Specifications for Steel for Buildings (A 9 – 33 T)
Tentative Specifications for Mild Steel Plates (A 10 – 33 T)

The new specifications for bridge and for building steel call for the 60,000 to 72,000 lb. per sq. in. tensile strength grade of steel. This is the grade previously required in the Tentative Specifications for Medium Structural Steel (A 140 – 32 T) issued in 1932, but which are now withdrawn. When these latter specifications were issued, it was expected they would eventually supersede the existing standard specifications for bridge and for building steel. This idea, however, met with some objections—it would eliminate specifications for a 55,000 to 65,000 tensile strength grade for certain plate uses; it would eliminate bessemer steel for certain building purposes; and the restriction on sulfur content was too close. After careful consideration, the various interests represented approved the plan of revising existing specifications so as to cover medium steel (60,000 to 72,000 lb. per sq. in. tensile) and to issue new specifications to cover the softer grade of plates.

Committee A-1 on Steel, through its Subcommittee II on Structural Steel for Bridges, Buildings and Rolling Stock, had been studying this proposal for many months. The American Institute of Steel Construction, American Railway Engineering Association and some of the highway departments and building codes have, or will shortly, adopt the so-called medium grade of structural steel and the new specifications are being issued to meet this definite need.

These new tentative specifications are included in the 1933 Book of Tentative Standards and in the current *Proceedings*, and are also available in separate form.

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Proceedings Will Be in Mails Soon

The *Proceedings* of the 1933 annual meeting are now being printed and every effort will be made to have them distributed during the first week in January.

Part I (1050 pages) contains the annual reports of 35 standing committees and of four sectional and research committees. The 49 new tentative standards first published this year are also given as well as all revised tentative standards and proposed revisions in standards. Included in Part I are two papers not preprinted—part of the report of Committee C-9—on "The Action of Water on Concrete," and "A Study of the Analysis of Fresh Concrete with the Dunagan Buoyancy Apparatus."

Part II, Technical Papers (812 pages), contains the Edgar Marburg Lecture on "Crystalline Structure in Relation to Failure ot Metals—Especially by Fatigue" (112 pages) and the Symposium on Cast Iron (159 pages). In addition there are 28 technical papers, several of which were not preprinted. Many of the members will find these latter papers of considerable interest as well as the discussion which was presented orally or by letter. This material is being printed for the first time.

Sectional Committee Culminates Research with Coal Classification

Six years of research and assembling data by the Technical Committees of the Sectional Committee on Classification of Coals, which is sponsored by the Society and functions under A.S.A. procedure, have culminated in the formulation of a tentative system for the classification of coals, according to the various ranks, ranging from lignite to anthracite and also a system for classification according to quality and grade. Reports of this work were presented at a meeting of the committee held at the Experiment Station of the U. S. Bureau of Mines, Pittsburgh, Pa., on October 26. It was the best attended and most enthusiastic meeting that the committees have held.

The Subcommittee on Boundary Lines presented a report in which coals were subdivided. The ranks of coal are classified into four groups, namely, anthracite, bituminous, sub-bituminous and lignite. The anthracite group consists of graphitic anthracite, normal anthracite and semi-anthracite. The bituminous group consists of low volatile bituminite, medium volatile bituminite, high volatile bituminite A, high volatile bituminite B, and high volatile bituminite C. The sub-bituminous group consists of sub-bituminite A, sub-bituminite B and sub-bituminite C. The lignitic group consists of lignite and brown coal.

The boundary lines between the different classes of anthracite and between the low moisture bituminous coals are defined by the percentage of fixed carbon on a dry mineral matter free basis. The boundary lines between the classes of high moisture bituminous coal and sub-bituminous coal and lignite are defined by the B.t.u. value on a moist mineral matter free basis; moist meaning that the coal contains the normal bed-moisture but not any extraneous or surface moisture.

Tables and charts were presented by members of the U. S. Bureau of Mines, U. S. Geological Survey, the State Geological Survey of Illinois and the Survey Branch of the Canadian Department of Mines, showing how the various North American coals fitted into the proposed system of classification. These charts represent several years intensive work by these organizations.

The names given to the different classes of coal were recommended by the Committee on Nomenclature. It was decided to use common names so far as possible but it is believed that it is more logical to give each class a substantive name such as has been the practice with respect to anthracite and lignite. Therefore, the bituminous and sub-bituminous classes were given an "ite" ending.

The Subcommittee on Methods of Analysis and Tests submitted a comprehensive report defining the various tests that are to be used in the classification of coal. In general A.S.T.M. methods are recommended for sampling and analysis. However, two new tests not yet standardized by the Society were recommended by the subcommittee. These are a test for the agglutinating value of coal and an accelerated test for determining weathering or slacking properties of coal. The subcommittee also recommended that the mineral matter free values used in classifying coal be calculated either by the Parr Unit coal formula or an approximation formula developed by the subcommittee.

Work has started on classifying coal according to grades, depending on the percentage of ash and sulfur, friability, etc., since such classification is important in the operation of coal codes.

Many Committees Have Work in Progress

Since the publication of the July BULLETIN, in which there was included an article outlining some of the major standardization activities of certain of the committees, statements have been received from a number of the other Society groups describing meetings which have been held and outlining some of the current work. The work of some of these committees is described in the paragraphs which follow. For convenience the articles are arranged in order of the committees' respective classifications.

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Cast Iron

The current work of Committee A-3 on Cast Iron chiefly involves the Tentative Specifications for Gray-Iron Castings (A 48 – 32 T). The committee is developing additional data on tension and transverse tests on various sizes of bars, and standard methods for making test bars are being studied. Since these problems affect both Subcommittee VI on General Castings and Subcommittee XIV on Correlation of Test Bar and Casting, a special subcommittee has been appointed headed by Mr. R. S. MacPherran, Chief Chemist, Allis-Chalmers Manufacturing Co. The cooperation of several educational institutions is being secured in carrying out the test program of this special committee.

A new subcommittee on light gray-iron castings has been appointed to develop specifications for this material. This group is headed by E. B. Sherwin, Chicago Hardware Foundry Co. The subcommittee on pig iron which has been reorganized with C. D. Mathews, Metallurgical Engineer, United States Pipe and Foundry Co., as chairman is making a study of pig iron specifications.

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Corrosion of Non-Ferrous Metals and Alloys

A discussion of the results of the very extensive atmospheric exposure tests constituted the main portion of the 1933 report of Committee B-3 on Corrosion of Non-Ferrous Metals and Alloys. While the work on corrosion in liquids has been hampered somewhat because of the conditions prevailing in the plants where tests in hydrochloric acid, salt brines and caustic soda had been planned, nevertheless, the tests in sulfuric acid have proceeded and the results will be reported next year. Some 22 metals and alloys are being tested in this project on liquid corrosion.

The first set of couples of the subcommittee on galvanic and electrolytic corrosion have been returned from the test fields for examination after a year's atmospheric exposure. Since it was necessary to develop a method for cleaning the corrosion products from the specimens the report was delayed but the results should constitute a very interesting section of the B-3 Report for 1934.

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Electrical-Heating, Electrical-Resistance and Electric-Furnace Alloys

A fundamental investigation of thermostatic metals has been started by Committee B-4 on Electrical-Heating, Electrical-Resistance and Electric-Furnace Alloys. This includes two main subjects, first, nomenclature and definitions, and second, methods of testing. It has been necessary first to prepare definitions for the various terms used in order to have the same understanding regarding them. Apparatus for determining the bending properties of thermostatic metals under load and temperature has been designed and built, and is being used in the development of methods of test for mechanical properties and temperature sensitivity.

The committee is working in cooperation with the Joint Research Committee on the Effect of Temperature on the Properties of Metals in developing a short-time tension test at elevated temperatures. A study of the test specimen is under way to determine the best method of casting and the dimensions. Bend tests for use at elevated temperatures to determine the elastic properties of thin strip metal and cast material are under consideration.

The effect of the size of test specimen upon the hours of life of electrical-heating wires, as determined by the accelerated life test, is being investigated. The committee is also studying a method for determining the temperature coefficient of sheet resistance material.

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Committee on Cement Meets

A well-attended series of meetings of A.S.T.M. Committee C-1 on Cement was held on October 30 and 31 in Allentown, Pa. Most of the working committees met on the first day and at the meeting of the main committee they presented reports of progress. (Members will recall that early this year Committee C-1 reorganized its subcommittee structure and appointed sponsoring committees which have charge of the respective cement specifications and working committees which are to foster necessary research on assigned problems.)

The working committee on plastic mortar tests for portland cement described its work on the study of results of the recent cooperative tests of 12 cements by ten laboratories. The tables and graphs which were distributed summarized the more important comparisons thus far made in this interesting study of the possibilities of compression tests of plastic mortar cubes. Tentative conclusions were offered but a complete report will be made later.

Ten laboratories are participating in a cooperative study of methods of chemical analysis. The committee on fineness is arranging for another series of cooperative subsieve fineness tests with a number of laboratories participating. Stoke's law will be used as the basis of particle size designation rather than some arbitrary basis.

Other committees presented interesting reports on portland cement, high-early-strength cements, blended cements, volume change and soundness of portland cement, time of setting, plasticity, etc. The next meeting of the committee is scheduled for Washington, D. C., in conjunction with the spring group meetings of A.S.T.M. committees.

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Mortars for Unit Masonry

Committee C-12 on Mortars for Unit Masonry completed its organization early this year. Since a review and correlation of existing data on mortars is essential as a basis for outlining a comprehensive program of research, the officers are working on this project and are soliciting funds so that a critical digest can be prepared. Once the information is available, the committee can proceed with tests and investigations without duplicating previous work.

Subcommittee VIII on Mortar Aggregates is collecting samples of typical mortar sands which are used in this country. An outline of the study of character of sand upon

its mortar-making properties is being prepared and a bibliography is in course of compilation.

The subcommittee on preparation of mortars has developed specifications and these are to be circulated among those interested for criticism. The group working on unit masonry construction practice has studied factors which must be considered in building watertight masonry walls with special reference to design and workmanship, and is preparing a preliminary draft of recommended practices for the use of mortars.

The program of work of the subcommittee on permeability tests is to be based on the results of a preliminary survey which has been made of factors involved in the permeability of masonry construction with particular reference to mortars and masonry units. A comprehensive program has been prepared by the subgroup working on efflorescence and staining and substantial progress has been made in assembling information relating to this subject as affected by mortars.

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Preservative Coatings

Committee D-1 on Preservative Coatings for Structural Materials also has an active program under way. Specifications and methods of test are being written for all lacquer solvents in common use, that are not already covered by the A.S.T.M. The testing of lacquer resins has, in the past, given considerable trouble, and this standing committee is undertaking some cooperative work that will lead to the establishment of acceptable methods of test. Activities in the development of hardness and abrasion tests for lacquer films are being continued.

Several groups have been formed to develop information with respect to testing of house paints, enamels, varnishes, lacquers, and the preparation of adequate specifications to cover panel tests on exterior exposure.

Work is under way on the present Tentative Specifications for Petroleum Spirits (Mineral Spirits) (D 235 – 26 T) with the view to restricting present distillation range requirements to a point that will prove commercially feasible.

The committee plans to develop a comprehensive definition for the term "solvency" to meet a need that has been quite generally expressed.

Work on anti-fouling paints is progressing, and results on test panels exposed in the Gulf waters at Cedar Keys, Fla., should be ready to be reported at the next meeting.

Revisions are being considered in the Specifications for Raw Tung Oil (D 12 – 33) to provide increased stringency and in a number of the standard methods of analysis.

Tentative specifications are being developed to cover bituminous types of primers for underground pipe protection. Work is being continued on the development of methods for the apparent color of heavy base solutions, for the purpose of establishing suitable color standards.

Committee D-1 has had a very active year having prepared 9 proposed standards which were published as tentative.

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Electrical Insulating Materials

Committee D-9 on Electrical Insulating Materials which met in New York City, October 19 and 20, has a number of research and standardization projects under way, some of which are briefly mentioned here. One of the studies is a joint one with Committee D-1 on Preservative Coatings for Structural Materials involving methods of testing shellac and artificial resins. The objective is the preparation of test methods which will be useful in connection with the electrical uses of these materials. Available methods of test are to be studied and their suitability determined and new methods will be prepared. Current efforts are being directed to flow characteristics and polymerization time.

Investigations of varnish as an impregnating medium are under way with particular attention devoted to the penetrating properties and ability to dry within the body of the insulation, and the relation of these properties to the ultimate dielectric strength of the finished material.

An important problem before the committee in connection with insulating oils is the determination of their aging qualities, which now are largely estimated by knowing the source of the oil and the refining method used. While Committee D-9 has developed a life test, it requires many days for completion and does not meet the requirements of the users of these materials. The committee has recently investigated the Sligh test and now that an aluminum oven has been developed which overcomes the danger of using the oil bath at high temperatures, it is expected further work will be carried out.

The subcommittee on ceramic materials is studying the questions of (*a*) the extent to which standard tests devised for porcelain can be applied advantageously to other ceramic insulations such as glass, steatite compounds, etc., and (*b*) the desirability of developing tests for glass where such special tests seem required by the nature of the material.

There is an increasing demand for measuring power factors at very high frequencies, such as 20 megacycles. This problem will be given consideration and if sufficient interest is shown an effort will be made to prepare a standard method of test. The committee is also working on a method for measuring power factors at 60 cycles.

In connection with untreated papers, a study is being made of various methods of determining acidity. The method of preparing the paper extract is, at present, requiring considerable attention, particular care being necessary to prevent hydrolysis of the cellulose. This problem is being investigated in several laboratories. Two other properties of paper, edge-tearing strength and folding endurance, are also being studied.

A large part of the use of mica is in connection with pasted mica sheets. The method of testing these sheets is now being studied. It will be necessary to determine not only the electrical properties but some of the mechanical properties of these sheets. Cooperative studies are being made of various properties with the idea of selecting those which seem to be most suitable for this class of material.

The moisture content of some sheet insulating materials depends to a considerable extent on the humidity of the air in which they are stored. Some of the constants of such materials are appreciably affected by their moisture content; others are but slightly affected. In order to insure a definite moisture content, it is necessary that the specimens be conditioned, that is, maintained in an atmosphere of a definite humidity for a considerable time. A study is being undertaken to determine what properties are appreciably affected by moisture content so that conditioning for these tests will be required. This is a continuation of the work which has been under way. During the past year it has been determined that conditioning is not necessary for determining the dielectric strength of materials provided the materials are to be used at humidities of 85 per cent or less.

Committee on Textiles Holds Two-Day Meeting

At the two-day meeting of Committee D-13 on Textile Materials, held in Providence, R. I., October 19 and 20, a clarification of the definition for direction of twist was submitted, interesting technical papers were presented and important steps were taken to advance the committee work. A new Section on Felt under the Subcommittee on Wool was appointed and Section VII on Osnaburg Bags of the Subcommittee on Cotton was discontinued. Several interesting subcommittee reports were presented, including that of the group on wool which is working on proposed specifications for wool yarn. A glossary of terms and definitions relating to wool which were prepared in cooperation with Subcommittee B-2 on Nomenclature and Definitions is to be sent out for criticism before submission to the main committee.

The modified definition of direction of twist which is to be submitted to letter ballot of D-13 reads as follows:

Twist, Direction of.—In the case of a yarn or cord held in a horizontal position and fixed at the left end, if the twist is taken out by turning to the right, or clockwise, it is right-hand, or regular twist, and if the twist is taken out by turning to the left, or counter clockwise, it is left-hand, or reverse twist, i.e., the yarn or cord has right-hand or regular twist if when it is held vertically the spirals or twists are seen to incline upward in a right-hand direction and has left-hand or reverse twist when the spirals or twists are seen to incline upward in a left-hand direction.

Prof. H. J. Ball, chairman of the committee, announced that, as a result of the invitation extended to the American Association of Textile Chemists and Colorists to appoint a representative on the wool subcommittee to avoid duplication of effort, Hugh Christison had been officially designated.

The following papers were presented at the meeting:

Strain Measurements of the Band Ply of an Inflated, Loaded Pneumatic Tire—Dr. H. W. Buckwalter, U. S. Rubber Co.
An Improved Method for Converting an Observed Skein Strength to That for a Specified Count—M. E. Campbell, U. S. Bureau of Agricultural Economics
Recent Developments in Testing Apparatus—Alfred Suter
Demonstration of New Method of Determining Single Ply and Cable Twists as They Lay in the Cord—James M. Scott, Henry L. Scott Co.

At the D-13 dinner, Brevard M. Jones of Jones, Gardner and Beal, Inc., discussed the factors affecting the quantity and quality of raw cotton and the marketing of American and Egyptian cottons.

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Work of Committee D-15 on Thermometers Extended

The scope of Committee D-15 on Thermometers has been enlarged in order that it can be in a position to advise on problems relating to laboratory glassware. The personnel of the committee has also been augmented to include representatives of the various manufacturers and the title of the committee has been changed to Committee D-15 on Thermometers and Laboratory Glassware.

A number of questions are constantly cropping up in the design of apparatus and in solving these problems the advice of the manufacturers is of considerable assistance. Since it is not possible to have representatives of the laboratory glassware manufacturers serve on each of the standing committees having problems of this kind, the present arrangement whereby such problems can be referred to Committee D-15 for study and advice is expected to provide the necessary contact.

Those committees having frequent occasion to write specifications for laboratory glassware in methods have the opportunity of representation on Committee D-15. However, the services of this committee are always available to act in an advisory capacity whenever requirements for this type of glassware are under consideration. Such problems should be referred to the chairman or secretary of this committee, W. H. Fulweiler, Chemical Engineer, United Gas Improvement Co. and C. S. Reeve, Manager, Research Development, The Barrett Co., respectively.

Several problems have already been submitted to the committee by other standing committees, including the groups on preservative coatings, petroleum products and lubricants and electrical insulating materials. Committee D-15 will make recommendations on these several matters.

The Scientific Apparatus Makers of America, who through arrangements made several years ago have furnished advice upon manufacturing problems and other details involved in the production of apparatus, practicable manufacturing tolerances, etc., will also cooperate with Committee D-15 respecting glassware.

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Committee on Natural Building Stones

Committee D-18 on Natural Building Stones found it impossible to hold a meeting during the year but has presented an informal report to the Society. The committee plans to recommend advancement to standard of certain of the methods of test it has developed including the following:

Tentative Method of:

Compression Testing of Natural Building Stone (D 326 – 30 T)
Flexure Testing of Natural Building Stone (D 327 – 31 T)
Test for Absorption and Apparent Specific Gravity of Natural Building Stone (D 328 – 31 T)
Test for Modulus of Elasticity of Natural Building Stone (D 338 – 31 T)
Shear Testing of Natural Building Stone (D 339 – 31 T)
Definitions of Terms Relating to Natural Building Stone (D 340 – 31 T)

In addition to these the committee is in a position to recommend the advancement to standard of the Tentative Method of Sampling Natural Building Stone and Sample for Testing (D 355 – 32 T). Criticism of the Tentative Method of Tension Testing of Natural Building Stone (D 356 – 32 T) has arisen and it is expected the committee will give consideration to these before definite steps are taken toward advancing this method.

Current activities before the committee include a study of uniform cubing procedure, uniform names and descriptions for stone finishes and the development of test procedures covering accelerated weathering, thermal expansion and fatigue.

It has been proposed that the classification of the Committee on Natural Building Stones be changed to bring it under the "C" committees which embrace masonry materials. This is desirable in order that the standards developed by the committee be grouped with such materials as brick, tile, concrete products, etc. The suggestion is that the committee approve a change in designation from "D-18" to "C-18" with corresponding changes in the "letter" designation of the standards under its jurisdiction.

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Water for Industrial Uses

Committee D-19 on Water for Industrial Uses effected permanent organization early this year. Preliminary announcement of the formation of this committee was made early in 1932. Four subcommittees have been organized and some of their work is outlined on the next page.

Subcommittee II, Editorial, will scrutinize proposed standards and see that they are in standard form. In addition it will interpret test methods and terminology and designate tolerances in the test methods. Its current program is as follows:

(*a*) Comparison of terminology, proposal of preferred terms, preparation of definitions of preferred terms and relation of other terms to preferred terms.
(*b*) Preparation of a general form for the writing of test methods, indicating essential divisions.
(*c*) Ultimate preparation in standard form of test methods for criticism by Committee D-19, and editing of approved test methods.

The current work scheduled includes consideration of nomenclature, definitions and interpretations of results which will be covered in test methods for dissolved oxygen, carbon dioxide and hydrogen-ion concentrations.

Subcommittee III on Methods of Sampling has for its purpose the preparation of standard methods of sampling for water in its various states. Methods which will be developed will include those for natural and processed waters for industrial uses, water vapor and condensation products of water vapor. The chairman of this subgroup has divided the work among certain fields as follows:

Locomotives; domestic water and biological; well drilling, whether oil or water; non-ferrous metals; marine; ferrous metals industry; water softening; soda and nitrogen industries; boilers; sanitary; beverages; paper industry; fermentation industry.

The scope of Subcommittee IV on Methods of Analysis includes the collection and verification of data for use in the preparation of methods of analysis of water. It will furnish data for the determination of the various ions, dissolved gases and other substances in water having both a varied hydrogen-ion concentration range and a varied dissolved salt content. Three sections of this group have been organized respectively to prepare reviews of all methods used to determine the following:

(*a*) Iron and aluminum oxides, calcium, magnesium and hardness in all classes of industrial waters.
(*b*) Bicarbonates, sulfates and chlorides in all classes of industrial waters.
(*c*) Dissolved solids, suspended matter and silica.

Mr. Max Hecht, Consulting Chemical Engineer, Pittsburgh, is chairman of Committee D-19. The following subcommittee chairmen have been appointed:

Subcommittee I on Policy and Memberships—F. N. Speller, Director, Department of Metallurgy and Research, National Tube Co., Pittsburgh.
Subcommittee II—E. P. Partridge, Supervising Engineer, Nonmetallic Minerals Experiment Station, U. S. Bureau of Mines, New Brunswick, N. J.
Subcommittee III—R. E. Hall, Director, Hall Laboratories, Inc., Pittsburgh.
Subcommittee IV—C. H. Fellows, Chemist, Research Department, The Detroit Edison Co., Detroit.

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Cement Laboratory Inspection Tour

The Cement Reference Laboratory, a joint undertaking of the Bureau of Standards and A.S.T.M. Committee C-1 on Cement, is now preparing for a fourth inspection tour among cement testing laboratories. Laboratories which desire to avail themselves of this inspection service should write to the Cement Reference Laboratory at the Bureau of Standards.

Applications for inspections should be filed promptly. Laboratories affected by the ruling of the Bureau of Public Roads, or requirements of other offices, necessitating Reference Laboratory inspections at certain intervals, particularly should give their attention to this matter since the tour will in general provide only one opportunity for the inspection of a laboratory during the next year or two.

It is required that laboratories remedy deficiencies in methods or apparatus, particularly any deficiencies which have been pointed out in reports of earlier inspections, and such improvement must be made prior to the inspector's visit.

The requirements for apparatus and methods are contained in the A.S.T.M. Standard Methods of Sampling and Testing Portland Cement (C 77 – 32). The 1932 revision of the A.S.T.M. Manual of Cement Testing also contains information of value to the cement laboratory operator.

James Haller Gibboney

1879 – 1933

In the death of Past-President James Haller Gibboney, the Society has lost one of its most beloved and active members. Mr. Gibboney passed away on October 30 in Roanoke, Va., following an abdominal operation. He is survived by his wife, a daughter and two sons.

Mr. Gibboney's record of activities in his chosen field, chemical engineering, and in the work of the Society is an inspiring one. Following his graduation from Virginia Polytechnic Institute in 1901 with the degree of B.S. in applied chemistry, he was assistant chemist, Virginia Agricultural Experiment Station, and in 1903 – 1904, chemist of the Virginia Iron, Coal and Coke Co. From 1904 to 1906 he was instructor in chemistry at V. P. I. and was awarded the M.S. degree in 1905. Since 1906 he had been with the Norfolk and Western Railway, becoming chief chemist in February, 1925.

Since 1906, Mr. Gibboney has been an active A.S.T.M. supporter—his interest never lagged and he was ever ready to serve the Society when called upon. He was a member of the Executive Committee from 1915 to 1917; vice-president in 1924 – 1926 and president for the term 1926 – 1927.

While he was a member of several A.S.T.M. committees, his predominate interest was in the work of Committee A-5 on Corrosion of Iron and Steel. He had been an officer since 1914 and since 1922 he served the committee as chairman. The very extensive activities of this committee, its extensive series of corrosion tests in far-flung parts of the country, and the important information it has developed, particularly the effects of adding copper to steels are in part a tribute to his ability as a leader and organizer. Mr. Gibboney was also a member of Committee A-1 on Steel and was one of the six members of the important Committee E-10 on Standards. He was much interested in the work of other national organizations, including the American Railway Engineering Association, American Foundrymen's Association and American Society for Steel Treating.

All those who came in contact with Mr. Gibboney in his committee and Society work appreciated his sterling character and his pleasant disposition. He was one of the most courteous of men and a true exponent of the Golden Rule day in and day out.

His interest and sustaining influence in Society work will be sorely missed. All who knew him will mourn his passing. Yet the years of pleasant association with him will be cherished and from his strong character, deep devotion to duty and effective leadership, his many friends and associates will derive strength and inspiration to carry on.

Tillman Davis Lynch

1867 – 1933

To the list of illustrious members of the Society who in the past two years have answered the last roll call, must be added the name of Past-President Tillman Davis Lynch. Mr. Lynch, ill for many months as the result of a stroke, died at his home in Pittsburgh on November 27. Prior to 1932, Mr. Lynch had been very active in Society work. A member since 1902, he made a host of friends who will keenly regret his passing. He had been connected with the Westinghouse Electric and Manufacturing Co. from 1899 to 1931.

Mr. Lynch studied at West Virginia Academy and graduated from West Virginia University in 1891 with the degree of civil engineer. He then joined the firm of Ferris and Co., and until 1897 was engaged in inspection work on production and also on erection projects; for the last two years in charge of the Chicago office. From 1897 to 1899 he was in the Bureau of Steam Engineering, U. S. Navy, on inspection work involving ferrous and non-ferrous materials.

Entering the employ of Westinghouse in 1899, he was successively inspector of materials, engineer of tests, section engineer in charge of manufacturing processes, and manager of the materials and process engineering departments, in charge of specifications, manufacturing processes and research development. In 1929, he became consulting metallurgical engineer for this company and in 1931 established a private consulting practice.

Mr. Lynch took a keen interest and participated in many A.S.T.M. activities. He was a member of the Executive Committee in 1925 – 1927, vice-president 1927 – 1929, and president for the term 1929 – 1930. At the time of his death he was a member of Committee D-5 on Coal and Coke, the Joint Committee on Effect of Phosphorus and Sulfur in Steel and chairman of the Pittsburgh District Committee. Prior committee affiliations included A-1 on Steel, A-3 on Cast Iron, A-4 on Heat Treatment, A-5 on Corrosion of Iron and Steel, and E-1 on Methods of Testing.

In 1922 – 1923 Mr. Lynch was president of the American Society for Steel Treating. He had also been a member of the Engineers' Society of Western Pennsylvania and participated in committee work of the American Foundrymen's Association. He was a past chairman of the Metallurgical Advisory Board and of its research committee.

The Society has greatly benefited from his many and varied services, cheerfully and unstintingly given. He was held in high regard by his associates and all who knew him—his death removes an able engineer and a man with a kindly understanding character.

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Information Desired on Use of A.S.T.M. Specifications and Test Methods

Considerable interest was evidenced in the series of short articles which appeared some time ago in the A.S.T.M. BULLETIN pointing out construction projects, building codes, manufacturing processes, etc., in which A.S.T.M. specifications and methods of test were designated. Consideration is being given to the preparation of another such series and any members of the Society or those interested in its work who know of activities where A.S.T.M. standards or tentative standards are being used or specified are urged to write the A.S.T.M. Headquarters listing any such information they may have.

Personals

News items concerning the activities of our members will be welcomed for inclusion in this column.

JAMES G. VAIL, Chemical Director, Philadelphia Quartz Co., has been awarded the Chemical Industry Medal by the Society of Chemical Industry, for his work on sodium silicates.

FRANK G. BREYER, partner in the firm of Singmaster and Breyer, New York City, was recently appointed manager of the Lacquer Manufacturers Association. In addition to numerous other activities, Mr. Breyer is also serving as chairman of the Committee on Unemployment and Relief for Chemists and Chemical Engineers in the Metropolitan area.

A. L. CLAYDEN, Research Engineer, Sun Oil Co., has been nominated as vice-president of the Fuels and Lubricants Division, Society of Automotive Engineers.

L. F. HICKERNELL, formerly electrical engineer, in charge of the cable engineering dept., and Hastings Laboratory Anaconda Wire and Cable Co., Hastings-on-Hudson, N. Y., has been appointed Chief Engineer of the company.

H. A. SCHWARTZ, Manager of Research, National Malleable and Steel Castings Co., Cleveland, was recently honored by election to the Case Chapter of Sigma Xi.

GEORGE L. LUCAS, formerly Division Engineer, Materials Inspection Division, Board of Transportation, New York City, has been appointed Engineer of Inspection, Port of New York Authority.

T. J. NOLAN, JR., who was formerly at the University of California on the Boulder Dam Cooperative Investigation, is now Junior Engineer, U. S. Bureau of Reclamation, Denver, Colo.

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New Members to December 1, 1933

The following 11 members were elected from October 19 to December 1, 1933:

Company Members (2)

Botany Worsted Mills, Fred Noechel, Physicist, Passaic, N. J.
Société Anonyme André Citroen, E. R. Frederick, American Representative, 968 First National Building, Detroit, Mich.

Individual and Other Members (9)

Bigelow, M. H., Research Chemist, Toledo Synthetic Products, Inc., Toledo, Ohio. For mail: Mellon Institute of Industrial Research, Pittsburgh, Pa.

Central China College, Department of Chemistry, T. G. Djang, Head of Department, Wuchang, China.

Cleveland Public Library, 325 Superior Ave., N. E., Cleveland, Ohio.

Lauer, C. E., Chief Chemist, Port Arthur Works, The Texas Company, Port Arthur, Tex.

LeFeber, Alfred, President, Barstow & LeFeber, Inc., 31 N. Summit St., Akron, Ohio.

Newsome, C. T., Chief Inspector, The Rover Co., Ltd., New Meteor Works, Coventry, Warwickshire, England.

Pomey, Jacques, Chief Research Engineer, Usines Renault, 10 Avenue Emile Zola, Billan Court, Seine, France.

Scherer, F. R., Superintendent of School Buildings, Board of Education, 13 Fitzhugh St., South, Rochester, N. Y.

Thatcher, E. F., Materials Engineer, St. Louis County Highway Dept., Clayton, Mo.

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Addresses Wanted

Anyone knowing the present address of any of the following members, whose last known addresses are listed below, is asked to notify the Secretary-Treasurer:

Tamotu Kurasina, Head, Electrical Engineering Investigation Dept., Shibaura Engineering Works, Ltd., 4-2 Suehirocho, Tsurumi-ku, Yokohama, Japan.

Paul J. Lalonde, 107 Eleventh St., Troy, N. Y.

F. E. Pickering, 1932 Summit St., Columbus, Ohio.

Williamson Testing Laboratories, Inc., W. R. Williamson, President, 919 N. Michigan Ave., Chicago, Ill.

PROFESSIONAL CARDS

PROFESSIONAL CARDS will be accepted for inclusion on this page from Consulting Engineers, Metallurgists, Chemists, Testing Engineers and Testing Laboratories.

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45 GROVER LANE CALDWELL, NEW JERSEY

SOUTHWESTERN LABORATORIES
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Inspections, Testing and Chemical Work
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and
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POLES, PILING, CROSSARMS, CROSS TIES, CONDUIT, LUMBER, STRUCTURAL TIMBER and PRESERVATIVE TREATMENTS
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CORROSION
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Consulting Metallurgists
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47 FULTON STREET NEW YORK
Branch: Buffalo Testing Laboratories, Inc.
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Metallographists *Chemists*
NEW YORK TESTING LABORATORIES
80 WASHINGTON STREET, NEW YORK CITY
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Ledoux & Company, Inc.
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Member Association of Consulting Chemists and Chemical Engineers

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Exposure Tests—Inspections and Reports
Merchandise Research
We specialize in the following types of tests:
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ELECTRICAL TESTING LABORATORIES
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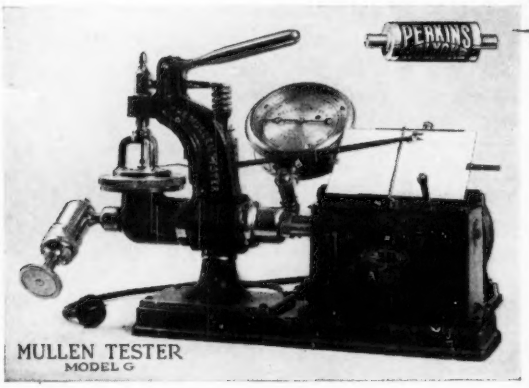

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MODEL G

While ascertaining the bursting strength of your specimen this tester also records on the deflectograph card the elongation or stretch of the material under test.

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For Quick and Accurate Viscosity Tests

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Recommended particularly for testing insulating varnishes, also for other varnishes, greases, heavy oils, liquid paint, asphalt and similar materials.

ADVANTAGES

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CHANGE OF ADDRESS

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After December 18, the address of the headquarters offices of the American Society for Testing Materials will be

260 S. Broad Street
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New Telephone Number: Pennypacker 3545

AMSLER

Machines for Charpy, Izod, and Impact-Tension Tests

constructed with *straight, uniformly* divided scales, showing the test results directly in values of *energy absorbed* in breaking the testpiece;

with adjustable height of impact hammer drop, permitting tests of strong and weak materials with equal accuracy and sensitiveness;

including means for checking the calibration of the machines.

WRITE FOR DESCR. NO. 126

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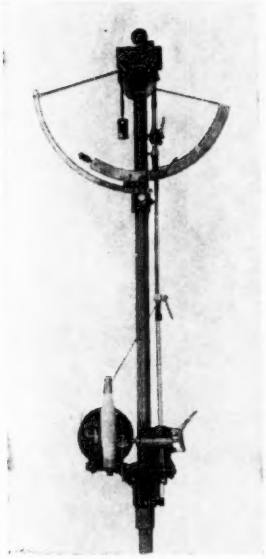

NEW Model X-5 Scott Tester

for all light materials.

Inclination balance type of head.

Two capacities in either English or metric units.

Stretch readings in percentage or direct in inches or centimeters.

Direct motor driven for positive speed.

Instant automatic reversal of pulling jaw.

Strength and stretch readings always in one line of vision.

Instant acting flat clamps, cam operated.

Stands from the floor. No oil to spill. No heavy weight to lift. Stretch device does not influence strength registration.

LOW IN PRICE

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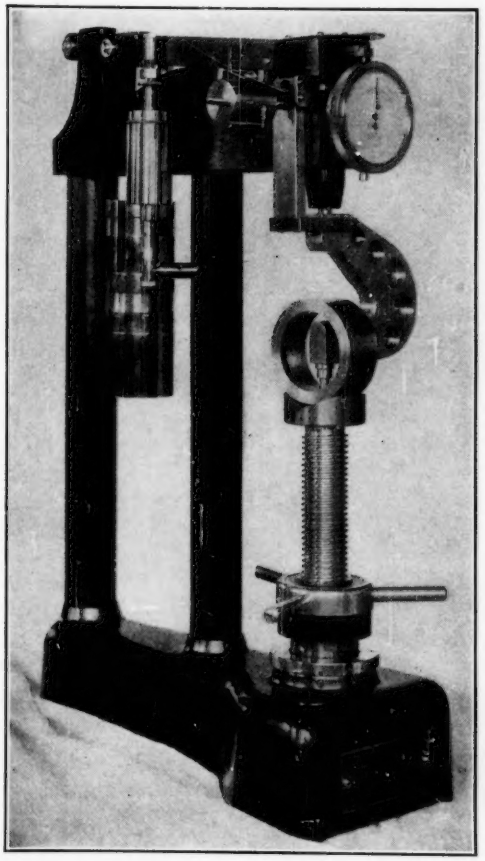
Inside Information



Sometimes it is the inner surface that counts most.

The illustration does not show a standard "ROCKWELL" Hardness Tester with an attachment, but does show a "ROCKWELL" modified for a special job. The tests are accurate.

If a piece can be rigidly supported and is not too small and you wish to test the inner surface for hardness, perhaps we can show you how to do it with a special "ROCKWELL."

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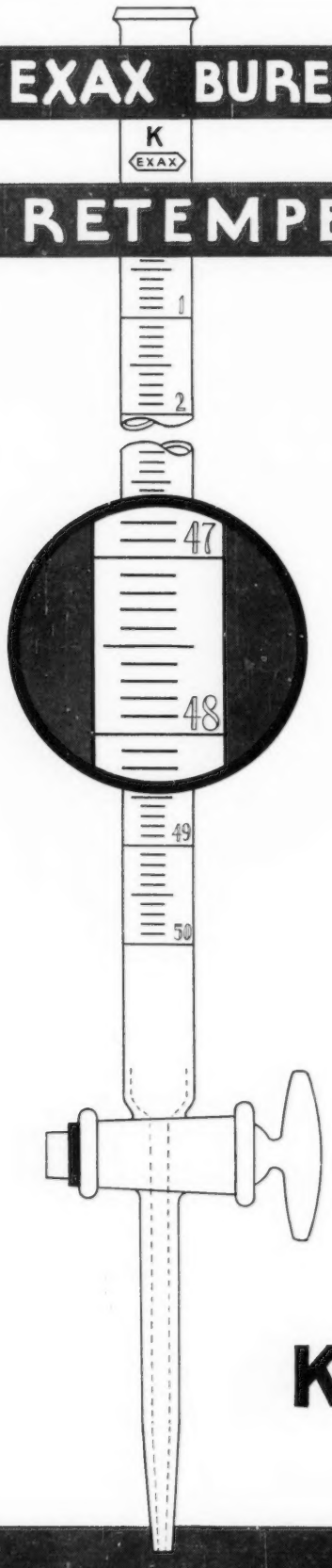

The name "EXAX" on a burette is your assurance of quality and accuracy. This Kimble trade-mark—appearing on Kimble Graduated Glassware—stamps the burette as commercially exact and dependable for all industrial scientific control and analyses.

OUTSTANDING FEATURES

1. Made from automatic-machine-made tubing of very uniform bore.
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3. Retempered (strain-free) in special lehr or oven.
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5. All lines and numbers deeply acid-etched. Filled with durable blue glass enamel, fused-in.
6. Main division lines completely encircle tube.
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10. Stopcocks accurately ground and tested against vacuum of 15″ of mercury.
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10 *ml*	±0.04 *ml*
25 *ml*	0.06 *ml*
50 *ml*	0.10 *ml*
100 *ml*	0.20 *ml*

Exax Burettes—like every other piece of Kimble Laboratory Glassware — are fully guaranteed by Kimble for performance and workmanship. Stocked by leading Laboratory Supply Houses throughout the United States and Canada.

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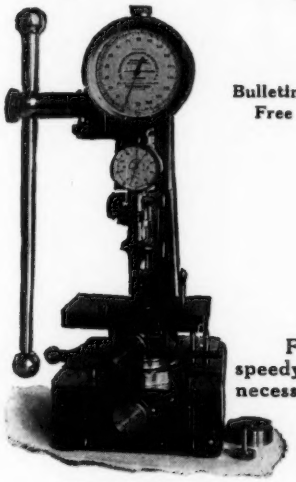

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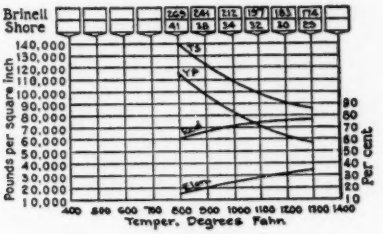

Chart Showing Use of Relative Scales of Brinell and Shore

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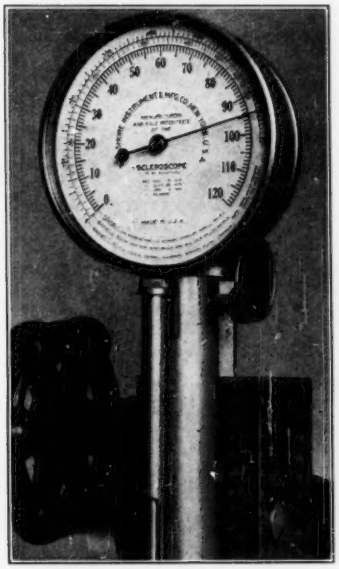

Recording SCLEROSCOPE Model D-1

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For the first time there has been prepared a compilation of particular interest to the paint, lacquer and related industries. Also, the publication which includes standards of chief interest to the textile industry was recently revised—the last compilation being issued in 1930.

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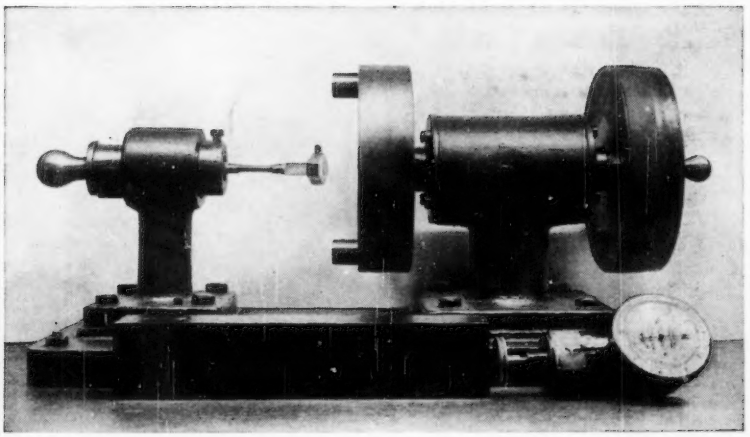
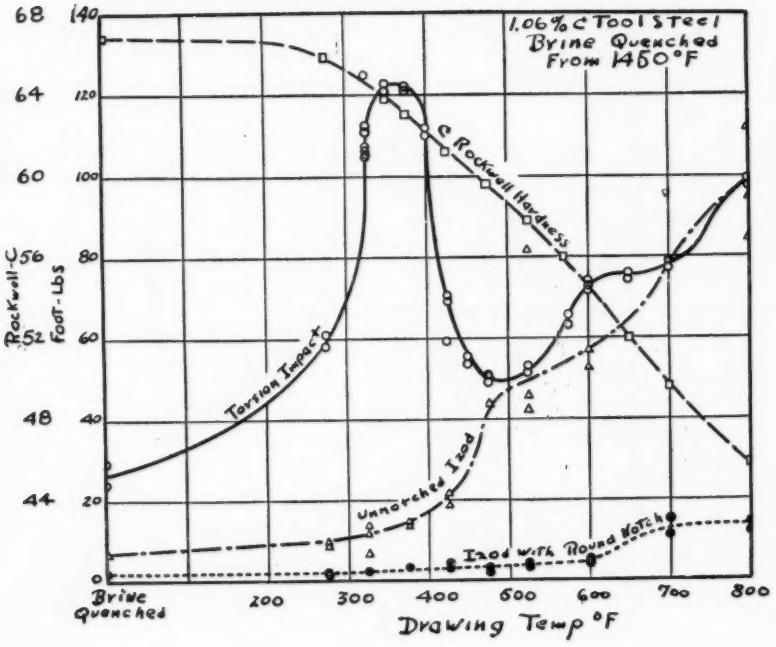
CARPENTER TORSION IMPACT MACHINE ••





The Carpenter Torsion Impact Machine was described in technical papers both at the A. S. T. M. annual meeting at Chicago, June, 1933, and at the National Metal Congress, Detroit, October, 1933, and has been the center of much interest for several reasons, three of which we give below.

1. The Torsion Impact Test fills in the gap left by the Izod Impact Test where hard steels are concerned. It may even be used successfully for impact tests of glass and ceramics, because it distributes the impact stress over the full area of the test piece in shear and becomes easily measurable.
2. It is an impact test of any machine member which operates in torsion, such as axles, propeller shafts, etc.
3. It is a direct test for machineability since it is a shear impact test and so is the machining operation. Its extremely high sensitivity is an exact index of the proper heat treatment to obtain best machining properties.

Write for details.

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The machine and a typical test result are shown at left. It should be noted that in the area between drawing temperatures of 200° to 450° F, the customary Izod tests reveal nothing of the true state of affairs, while torsion impact reveals the state which experience has taught really exists. In addition, the tests reveal much as to the machineability of steel—frequently a factor of major importance in association with other factors, such as strength, elastic limit, hardness, etc.

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